

First Time



D.L. RICCI CORP. PWHT JOB ANALYSIS SHEET

CUSTOMER: Major Tool
 JOBSITE: Indianapolis Indiana
 DATE: 1-31-06 CUSTOMER CONTACT: Doug McCorkle
 TECHNICIAN: Eric, Herb, Bob, Joe, Seth, Kevin PROCEDURE/MATERIAL: In conl/stainless steel
 WORK ORDER#: 65678/1.0 JOB LOCATION: Major tool shop
 SYSTEM #: _____ RECORDER S/N#: R-91, RC-088, RC-074, RC-079
 I.S.O. LINE #: _____ RC-070, RC-093, RC-037, RC-092, R-94, R-93, R-95
 SPOOL #: _____
 FIELD WELD #: _____
 CHART #: 11 TOTAL WELDS: _____ TOTAL TC'S: 101

WORK DESCRIPTION: ran a bake at 707° on the vessel and 275°-311° on the parts.

parts

HEAT CYCLE: 300° at 50°/hr 120 min. at 300° held 21 hours
70 min. at 707° held 24 hours.
 AMBIENT TO 707° F AT 50°/hr F/HR, ABOVE _____ F AT _____ F/HR
 HOLD FOR _____ HRS AT _____ F/HR, +/- _____ F, COOL TO _____ F AT _____ F/HR.
 COOL TO AMBIENT UNDER INSULATION Y/N _____

PWHT CYCLE INFORMATION:

started at Ambient and ramped up 50° every 70 min on the vessel till 707
started at Ambient and slowly ramped up on the parts 50° every
2 hours or so.
When the vessel got to 700° we held it the first time 24 hours First Time
when the parts got to 300° we held them 21 hours the First Time
when held time was complete we ramp Down on the vessel 50° per ~~hour~~ 70 min
till about 500° and then the parts fell out of soak and then we
 * TO INCLUDE ALL INFORMATION RELEVANT TO PWHT CYCLE*

Herb Jacobs 2/11/06
 TECHNICIAN DATE

CUSTOMER ACCEPTANCE*: [Signature]
 * SIGNATURE ACCEPTS ABOVE HEAT CYCLE PROCEDURE

DATE: 11 Feb 2006

K Drive: Job Sheet- Excel File
start to ramp the parts Down 50° per ~~hour~~ 70 min to 200°
and at 500° we changed the ramp rate on the vessel to 90° per hour
and target temp to 100° per ~~step~~ step and we would hold each step till
we were within 10° Top to Bottom



D.L. RICCI CORP. TIME TEMPERATURE TABULATIONS

CUSTOMER: _____

DATE: 2-6

CUSTOMER CONTACT: _____

TECHNICIAN: _____

PROCEDURE/MATERIAL: _____

WORK ORDER#: _____

JOB LOCATION: _____

SYSTEM #: _____

RECORDER SERIAL #: AH039C062

I.S.O. LINE #: _____

SPOOL #: _____

FIELD WELD #: _____

CHART #: 10

TOTAL WELDS: _____

TOTAL TC'S: 12

TIME/TC	1	2	3	4	5	6	7	8	9	11	12
14:13	69	70	70	71	70	68	48	69	60	69	69
14:43	126	127	130	130	126	124	124	124	125	125	124
15:13	129	141	144	148	122	122	121	122	121	122	120
15:43	122	135	143	146	122	122	121	120	121	120	121
16:13	128	136	146	152	122	122	121	122	122	121	122
16:43	153	159	169	167	122	122	121	122	123	121	122
17:13	165	167	170	167	122	122	121	121	122	121	123
17:43	169	172	169	172	122	122	121	121	122	121	122
18:13	169	169	170	170	122	122	121	122	122	122	122
18:43	120	169	169	169	122	122	122	121	122	121	122
19:13	170	169	169	169	122	122	121	122	122	121	122
19:43	175	173	173	175	128	128	128	128	128	128	128
20:13	199	198	198	198	152	152	153	153	153	152	153
20:43	220	221	222	222	170	170	168	169	169	168	164
21:13	219	219	225	218	170	170	170	169	170	169	170
21:43	244	244	250	244	195	194	194	194	195	194	194
22:13	264	269	275	268	220	214	218	219	219	218	214
22:43	281	281	294	288	233	233	233	233	233	233	233
23:13	300	306	310	315	259	258	258	258	258	258	258
23:43	314	319	329	319	270	270	268	268	269	268	268
00:13	334	331	346	335	270	270	269	269	269	268	269
00:43	359	356	370	358	270	270	268	268	269	268	269
01:13	379	377	389	381	270	270	269	268	269	268	268
1:43	404	402	413	407	270	270	268	268	269	268	269
2:13	420	411	426	418	270	270	267	268	268	268	269
2:43	444	438	450	442	270	270	268	260	269	268	269
3:13	469	463	472	466	270	270	268	268	268	268	269
3:43	486	483	489	489	270	270	268	268	269	268	269
4:13	510	508	514	514	270	270	269	268	269	268	269

* Time/Temperature Log shall be used to record temperatures above 800 Degrees F (or per applicable procedure) every hour during the heating and cooling cycles and every one-half hour during PWHT cycle.

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D.L. RICCI CORP. TIME TEMPERATURE TABULATIONS

CUSTOMER: _____

DATE: 27

CUSTOMER CONTACT: _____

TECHNICIAN: _____

PROCEDURE/MATERIAL: _____

WORK ORDER#: _____

JOB LOCATION: _____

SYSTEM #: _____

RECORDER SERIAL #: A40394062

I.S.O. LINE #: _____

SPOOL #: _____

FIELD WELD #: _____

CHART #: 10

TOTAL WELDS: _____

TOTAL TC'S: 12

TIME/TC	1	2	3	4	5	6	7	8	9	10	12
4:43	525	518	529	524	270	270	268	268	269	268	269
5:13	550	544	554	550	270	270	268	268	269	268	269
5:43	561	568	569	569	270	270	268	268	269	268	269
6:13	592	588	593	592	270	270	268	268	269	268	268
6:43	617	614	618	617	270	270	268	268	269	268	268
7:13	635	625	638	635	270	270	268	268	269	268	269
7:43	660	651	662	660	270	270	268	269	269	268	269
8:13	673	670	674	675	270	270	268	270	269	268	270
8:43	698	695	699	700	270	270	268	273	268	268	269
9:13	699	697	699	699	270	270	268	277	269	268	268
9:43	699	697	699	699	270	270	268	281	269	268	269
10:13	704	701	703	705	270	270	268	285	268	268	269
10:43	706	706	706	706	282	282	281	292	281	280	281
11:13	706	706	706	707	300	300	298	301	299	300	300
11:43	706	706	706	706	300	300	298	300	299	298	299
12:13	706	706	706	707	300	300	298	302	298	298	298
12:43	706	706	706	706	300	300	298	303	298	298	303
13:13	706	706	705	706	300	306	297	304	299	298	303
13:43	706	707	706	706	300	306	297	305	299	297	305
14:13	706	707	706	706	300	306	297	306	298	298	305
14:43	707	707	706	706	300	306	298	307	298	298	305
15:13	707	707	706	706	300	306	298	308	298	298	305
15:43	707	707	706	706	300	306	298	309	298	298	304
16:13	706	707	706	707	300	306	298	309	298	298	286
16:43	707	706	706	706	308	306	298	309	298	298	306
17:13	707	706	706	706	300	305	298	305	299	298	299
17:43	707	707	706	706	300	306	298	302	299	298	300
18:13	707	706	706	706	300	306	298	301	299	298	298
18:43	707	707	706	706	300	306	298	303	299	298	298

vessel
9:30

Start scan

* Time/Temperature Log shall be used to record temperatures above 800 Degrees F (or per applicable procedure) every hour during the heating and cooling cycles and every one-half hour during PWHT cycle.

=PORT



D.L. RICCI CORP. TIME TEMPERATURE TABULATIONS

CUSTOMER: _____

DATE: 2-8

CUSTOMER CONTACT: _____

TECHNICIAN: _____

PROCEDURE/MATERIAL: _____

WORK ORDER #: _____

JOB LOCATION: _____

SYSTEM #: _____

RECORDER SERIAL #: AH 039062

I.S.O. LINE #: _____

SPOOL #: _____

FIELD WELD #: _____

CHART #: 10

TOTAL WELDS: _____

TOTAL TC'S: 12

TIME/TC	1	2	3	4	5	6	7	8	9	10	11	12
19:13	707	707	706	706	300	306	299	304	299		298	29
19:43	707	707	706	706	300	306	298	305	299		298	29
20:13	707	707	706	706	300	306	298	307	299		298	29
20:43	709	707	706	706	300	306	298	307	299		298	29
21:42	707	707	706	706	300	306	298	309	299		298	29
22:42	707	707	706	706	300	306	298	306	299		298	29
23:42	707	707	706	707	300	306	298	307	299		298	29
00:42	707	707	706	706	300	306	298	302	298		298	29
1:42	707	707	706	707	300	306	298	302	299		298	29
2:42	707	707	706	706	300	306	298	301	299		298	29
3:42	707	707	706	706	300	306	298	301	299		298	29
4:42	707	707	706	707	300	306	298	301	299		298	29
5:42	707	707	706	706	300	305	298	301	299		298	29
6:42	707	707	706	706	300	306	298	300	298		298	29
7:42	707	707	706	706	300	306	298	300	298		298	29
8:42	699	694	700	698	300	306	298	300	298		298	29
9:42	674	671	674	674	300	306	298	298	298		298	29
9:42	649	648	649	650	300	306	298	295	298		298	29
10:12	625	620	626	625	300	306	298	298	298		298	29
10:42	600	597	602	601	300	306	298	298	298		298	29
11:12	579	574	592	587	300	306	298	298	299		298	29
12:12	499	497	532	498	300	305	300	304	298		298	29
13:12	450	447	489	464	300	305	298	304	299		298	29
14:12	400	399	437	398	300	305	298	303	298		298	29
15:12	366	361	409	382	277	282	274	283	275		274	275
16:12	349	348	377	348	250	249	248	248	249		248	24
17:12	337	323	350	315	210	222	207	223	212		209	21
18:12	299	297	327	299	170	202	167	200	180		174	18
19:12	296	293	335	298	144	188	141	183	157		150	16

V
END
830

* Time/Temperature Log shall be used to record temperatures above 800 Degrees F (or per applicable procedure) every hour during the heating and cooling cycles and every one-half hour during PWHT cycle.

=PORT



D.L. RICCI CORP. TIME TEMPERATURE TABULATIONS

CUSTOMER: _____

DATE: 2-9

CUSTOMER CONTACT: _____

TECHNICIAN: _____

PROCEDURE/MATERIAL: _____

WORK ORDER#: _____

JOB LOCATION: _____

SYSTEM #: _____

RECORDER SERIAL #: AH 039 C061

I.S.O. LINE #: _____

SPOOL #: _____

FIELD WELD #: _____

CHART #: 10

TOTAL WELDS: _____

TOTAL TC'S: 11

TIME/TC	1	2	3	4	5	6	7	8	9	11	12
20:12	279	277	320	280	125	176	124	169	140	132	158
21:12	241	246	286	271	112	166	112	157	127	126	178
22:12	236	229	266	251	102	157	103	147	117	109	128
23:12	206	197	228	228	95	149	97	130	109	102	119
00:12	199	208 199	208	207	100 90	143	92	129	102	96	111
1:12	199	208	204	194	86	135	88	122	96	91	104
2:27	199	208	204	194	86	135	88	122	96	91	104
3:27	240	247	230	240	125	137	126	124	124	124	124
4:27	256	253	254	262	132	135	132	131	131	131	132
5:27	280	279	279	282	157	160	156	155	155	156	156
6:27	318	316	324	320	194	193	192	193	193	193	193
7:27	351	356	369	354	236	234	234	234	235	234	236
8:27	402	402	409	403	275	274	273	273	273	273	273
9:27	450	449	454	449	275	275	273	273	274	273	274
10:27	492	490	498	493	286	286	284	285	285	284	284
11:27	535	530	539	532	300	300	298	298	298	298	299
12:27	579	576	579	575	300	300	298	298	298	298	299
13:27	617	614	619	617	300	300	300	305	300	300	300
14:27	656	652	659	658	300	300	300	304	300	300	300
15:27	698	697	699	699	300	300	300	307	300	300	301
16:27	707	707	707	707	304	304	303	307	302	302	302
17:27	707	708	707	707	304	304	303	306	302	302	302
18:27	708	708	707	707	304	303	305	305	302	302	302
19:27	708	708	707	707	304	304	303	305	302	302	303
20:27	708	701	707	707	304	304	303	306	302	302	302
21:27	708	709	707	707	304	304	303	306	302	302	302
22:27	708	709	707	707	304	304	303	306	302	302	302
23:27	708	709	707	707	304	304	303	306	302	302	302
00:27	708	709	707	707	304	304	303	306	302	302	302
01:27	708	709	707	707	304	304	303	306	302	302	302
02:27	708	709	707	707	304	304	303	306	302	302	302
03:27	708	709	707	707	304	304	303	306	302	302	302
04:27	708	709	707	707	304	304	303	306	302	302	302
05:27	708	709	707	707	304	304	303	306	302	302	302
06:27	708	709	707	707	304	304	303	306	302	302	302
07:27	708	709	707	707	304	304	303	306	302	302	302
08:27	708	709	707	707	304	304	303	306	302	302	302
09:27	708	709	707	707	304	304	303	306	302	302	302
10:27	708	709	707	707	304	304	303	306	302	302	302
11:27	708	709	707	707	304	304	303	306	302	302	302
12:27	708	709	707	707	304	304	303	306	302	302	302
13:27	708	709	707	707	304	304	303	306	302	302	302
14:27	708	709	707	707	304	304	303	306	302	302	302
15:27	708	709	707	707	304	304	303	306	302	302	302
16:27	708	709	707	707	304	304	303	306	302	302	302
17:27	708	709	707	707	304	304	303	306	302	302	302
18:27	708	709	707	707	304	304	303	306	302	302	302
19:27	708	709	707	707	304	304	303	306	302	302	302
20:27	708	709	707	707	304	304	303	306	302	302	302
21:27	708	709	707	707	304	304	303	306	302	302	302
22:27	708	709	707	707	304	304	303	306	302	302	302
23:27	708	709	707	707	304	304	303	306	302	302	302

3:45 PM START

up

* Time/Temperature Log shall be used to record temperatures above 800 Degrees F (or per applicable procedure) every hour during the heating and cooling cycles and every one-half hour during PWHT cycle.

=PORT



D.L. RICCI CORP. TIME TEMPERATURE TABULATIONS

CUSTOMER: _____

DATE: 2-16

CUSTOMER CONTACT: _____

TECHNICIAN: _____

PROCEDURE/MATERIAL: _____

WORK ORDER#: _____

JOB LOCATION: _____

SYSTEM #: _____

RECORDER SERIAL #: _____

I.S.O. LINE #: _____

SPOOL #: _____

FIELD WELD #: _____

CHART #: 10

TOTAL WELDS: _____

TOTAL TC'S: 11

2nd
cycle
7:45
4th
Ramp
Down

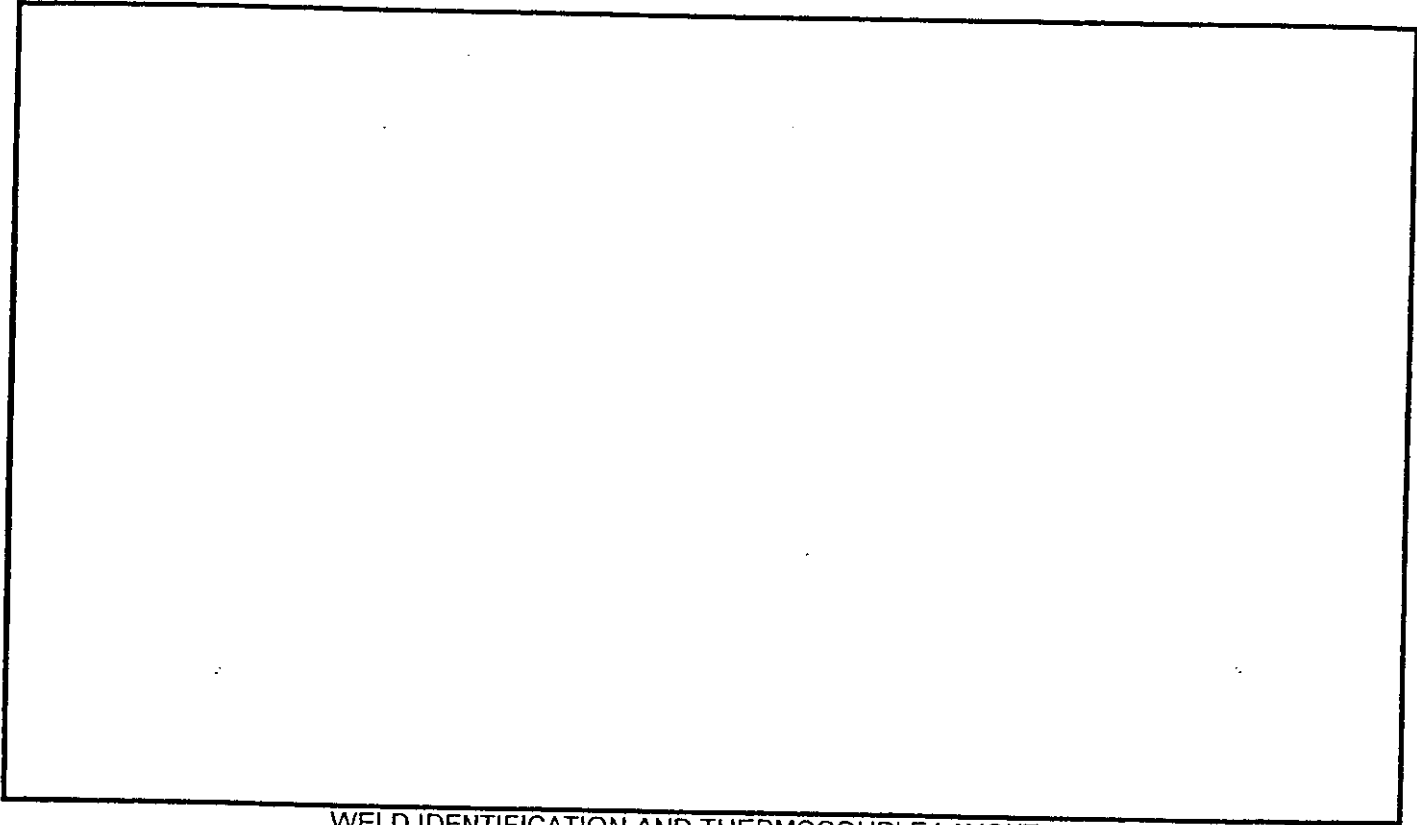
TIME/TC	1	2	3	4	5	6	7	8	9	10	11
23:27	708	709	707	708	304	304	303	306	303	302	302
20:27	708	709	707	706	304	304	303	307	302	302	302
12:27	708	709	707	708	304	304	303	307	302	302	302
8:27	708	705	707	707	304	304	303	307	703	302	302
3:27	708	708	707	707	303	304	303	307	302	302	302
4:27	708	709	707	707	304	304	303	307	702	302	302
5:27	708	708	707	707	304	304	303	307	702	302	302
6:27	708	709	707	707	304	304	303	307	302	302	302
7:27	708	709	707	707	304	304	303	307	302	302	303
8:27	675	673	675	676	304	304	303	305	302	302	302
9:27	627	622	633	628	304	304	303	305	285	302	302
10:27	578	571	588	592	304	304	303	305	300	302	307
11:27	499	498	516	516	283	283	282	291	280	281	281
12:27	450	447	472	471	250	250	248	262	248	248	249
13:27	399	399	409	408	224	236	223	237	226	223	229
14:27	374	368	390	391	199	217	199	218	198	198	200
15:27	299	299	336	336	164	202	165	200	173	168	178
16:27	279	265	300	297	193	189	141	183	152	146	160
17:27	230	202	253	258	122	178	123	169	137	130	144
18:27	195	178	216	222	109	167	111	150	129	117	131
19:15	174	158	112	144	101	154	104	146	115	109	123

* Time/Temperature Log shall be used to record temperatures above 800 Degrees F (or per applicable procedure) every hour during the heating and cooling cycles and every one-half hour during PWHT cycle.



D.L. RICCI CORP.
WELD AND THERMOCOUPLE IDENTIFICATION

DATE: 1-31-06 CUSTOMER CONTACT: Doug McCorkle
 TECHNICIAN: Eric, Herb, Brad, Joe, Seth, Kevin PROCEDURE/MATERIAL: Inconel / Stainless Steel
 WORK ORDER#: _____ JOB LOCATION: Major Tool shop
 SYSTEM #: _____ RECORDER S/N#: R-91, RC-088, RC-074, RC-079
 I.S.O. LINE #: _____ RC-070, RC-093, RC-037, RC-092, R-94, R-93, R-95
 SPOOL #: _____
 FIELD WELD #: _____
 CHART #: 11 Recorders TOTAL WELDS: _____ TOTAL TC'S: 101



WELD IDENTIFICATION AND THERMOCOUPLE LAYOUT
 THIS I.S.O. DRAWING IS COMPLETED BY THE PWHT TECHNICIAN

Herb [Signature] 2-11-06
 TECHNICIAN DATE



PWHT QUALITY CONTROL SHEET

CUSTOMER Major Tool W/O# _____

DATE: 2-11-06

1. Customer has given specific direction to D.L. Ricci, as to which welds need PWHT. Heat Treating Documentation packet has been given to the technician. The technician as reviewed the procedure.
Herb Spade
Technician
2. Drawings of each spool piece have been completed. Each drawing shows the spool piece number and describes each weld on the spool.
Herb Spade
Technician
3. Welds are wrapped and troubleshooting is complete. All zones are working properly. Technician has reviewed procedure (ramp rate, soak temperature, soak time).
Herb Spade
Technician
4. Welds are at soak temperature. Technician has reviewed chart (checking ramp rate up to soak).
Herb Spade
Technician
5. When soak is complete, technician has reviewed chart, checked soak time/temperature and reviewed ramp rate to completion.
Herb Spade
Technician
6. PWHT is complete. Technician has reviewed chart and everything is correct. (Do not unwrap welds until this stage is signed off)
Herb Spade
Technician
7. Unwrap welds. Take hardness test if required and record results.

Technician



Electric Heating Systems, Inc.

109 North Gold Drive
Robbinsville, NJ 08691

Phone: 609.259.4116
Fax: 609.259.4119

CERTIFICATE OF CALIBRATION

CERT # 2005677

NAME E.H.S. R-94

JOB #

MODEL : AH 3745-N00	SERIAL NUMBER: AH-039C062
THERMOCOUPLE TYPE : K	RANGE: 0 / 2000 degF
CALIBRATION DATE : 9/23/2005	DUE DATE : 9/23/2006

TEST EQUIPMENT USED:	
MANUFACTURER : FLUKE	CALIBRATION DATE : 6/24/2005
MODEL No 714	ACCURACY : +/-10 DEG F
SERIAL No 7216012	

AMBIENT TEMPERATURE: 72

HUMIDITY: 69%

INPUT	AS FOUND	AS LEFT	ACCURACY
200	200	200	+/-10 DEG F
800	800	800	+/-10 DEG F
1000	1000	1000	+/-10 DEG F
1200	1200	1200	+/-10 DEG F
1600	1600	1600	+/-10 DEG F
1800	1800	1800	+/-10 DEG F

THIS INSTRUMENT HAS BEEN CALIBRATED WITHIN MANUFACTURERS SPECIFICATION.
THIS CALIBRATION IS TRACEABLE TO THE N. I. S. T.
WE GUARANTEE THAT THIS PRODUCT HAS PASSED THROUGH E. H. S. STANDARD
TESTING AND SATISFIES ALL SPECIFICATIONS

CALIBRATED BY:- PHIL ISAACSON

SIGNATURE :-

2nd Time



D.L. RICCI CORP. PWHT JOB ANALYSIS SHEET

CUSTOMER: Major Tool
 JOBSITE: Indianapolis Indiana
 DATE: 2-9-06 CUSTOMER CONTACT: Dana McCorkle
 TECHNICIAN: Eric, Herb, Bret, Joe, Seth, Kevin PROCEDURE/MATERIAL: Inconel/stainless steel
 WORK ORDER#: _____ JOB LOCATION: Major Tool Shop
 SYSTEM #: _____ RECORDER S/N#: R-91, RC-088, 074, 079, 070
 I.S.O. LINE #: _____ RC-093, RC037, RC-092, R-94, R-93, R.
 SPOOL #: _____
 FIELD WELD #: _____
 CHART #: 11 charts TOTAL WELDS: _____ TOTAL TC'S: 101

WORK DESCRIPTION: When Temps were all lower then 212° we ^{started} ~~begin~~ ramping up the vessel and ports till we got the ports back up to 300° & vessel Back up to 707° and then held parts at Temp for 21 hours & The vessel for 18 hours so the both had a total of 42 hours of soak

vessel Parts from 200° to 300° at 50°/Per 120 min; then Held 21 hours
 HEAT CYCLE From 200° to 707° at 50°/per 70 min Then Held 18 hours.
 AMBIENT TO _____ F AT _____ F/HR, ABOVE _____ F AT _____ F/HR
 HOLD FOR _____ HRS AT _____ F/HR, +/- _____ F, COOL TO _____ F AT _____ F/HR.
 COOL TO AMBIENT UNDER INSULATION Y/N _____

PWHT CYCLE INFORMATION:

When hold time was complete we ramped down on the vessel at 50° per hour till 500° to ~~to~~ keep parts in soak for 3 extra hours so we would have 42 hours on both parts and vessel. after we were at 500° we set the ramp to 90° per hour and the target temp Down 100° and held at each target temp till even and then set Target temp 100° less untill we were and 200° Then we start off machs. and let cool.

* TO INCLUDE ALL INFORMATION RELEVANT TO PWHT CYCLE*

Herb Spedon 2/11/06
 TECHNICIAN DATE

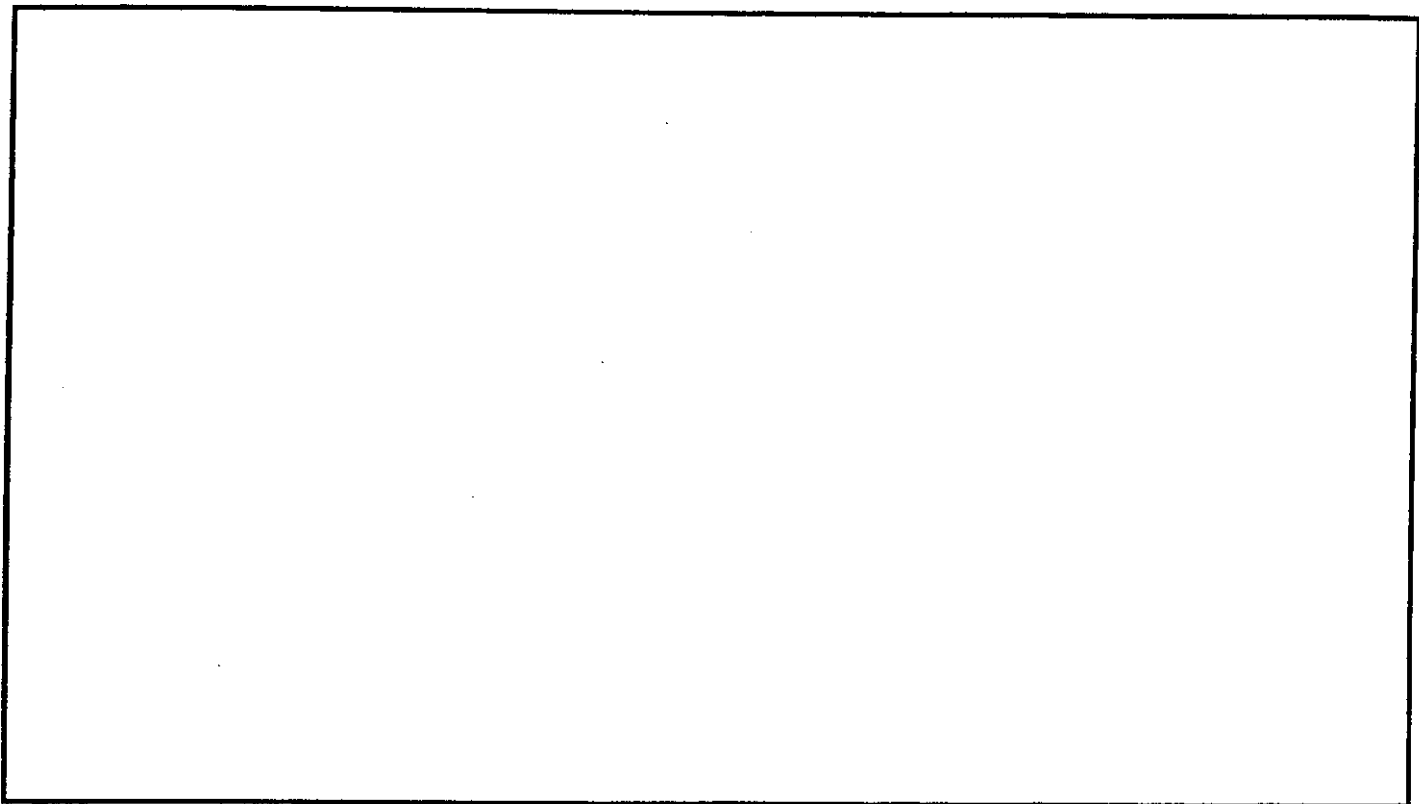
CUSTOMER ACCEPTANCE*: [Signature]
 * SIGNATURE ACCEPTS ABOVE HEAT CYCLE PROCEDURE

DATE: 11 Feb 2006



D.L. RICCI CORP.
WELD AND THERMOCOUPLE IDENTIFICATION

DATE: 2-9-06 CUSTOMER CONTACT: Doug McCorkle
 TECHNICIAN: Eric, Herb, Brian, Joe, Seth, Kevin PROCEDURE/MATERIAL: Inconel / stainless steel
 WORK ORDER#: _____ JOB LOCATION: _____
 SYSTEM #: _____ RECORDER S/N#: R-91, RC-088, RC-074, RC-07
 I.S.O. LINE #: _____ RC-070, RC-093, RC-037, RC-092, R-94, R-93, R-9
 SPOOL #: _____
 FIELD WELD #: _____
 CHART #: 11 Records TOTAL WELDS: _____ TOTAL TC'S: 101



WELD IDENTIFICATION AND THERMOCOUPLE LAYOUT
 THIS I.S.O. DRAWING IS COMPLETED BY THE PWHT TECHNICIAN

 TECHNICIAN DATE



PWHT QUALITY CONTROL SHEET

CUSTOMER Major Tool W/O# _____

DATE: 2-9-06

1. Customer has given specific direction to D.L. Ricci, as to which welds need PWHT. Heat Treating Documentation packet has been given to the technician. The technician has reviewed the procedure.
Nest Jacob
Technician
2. Drawings of each spool piece have been completed. Each drawing shows the spool piece number and describes each weld on the spool.
Nest Jacob
Technician
3. Welds are wrapped and troubleshooting is complete. All zones are working properly. Technician has reviewed procedure (ramp rate, soak temperature, soak time).
Nest Jacob
Technician
4. Welds are at soak temperature. Technician has reviewed chart (checking ramp rate up to soak).
Nest Jacob
Technician
5. When soak is complete, technician has reviewed chart, checked soak time/temperature and reviewed ramp rate to completion.
Nest Jacob
Technician
6. PWHT is complete. Technician has reviewed chart and everything is correct. (Do not unwrap welds until this stage is signed off)
Nest Jacob
Technician
7. Unwrap welds. Take hardness test if required and record results.

Technician